



Grade 4 Mathematics

***Constructed Response
Scoring Guides
Winter 1999***

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1999 Grade 4 MEAP Mathematics Scoring Guide

These scoring guides and annotated papers are provided to help you evaluate and score the constructed response items on the 1999 MEAP Mathematics test. For each item a rubric and an exemplar answer are given. Student papers are provided to illustrate the rubric. The annotations are on a separate page, so that the student papers can be copied and scored as part of training.

The scoring guides provided here represent only one possibility. You may decide to create your own scoring rubric. You may want to require that spelling and grammar are part of scoring, as well as labeling (units and graphs) and showing all work. Feel free to adjust and revise the scoring guide to fit your needs.

General Recommendations and Guidelines

Studying the sample student responses and annotations will help you understand the essence of what is expected at each score point for a particular question. Keep in mind that these sample student responses represent only a few of the many possible responses for a given score point.

To ensure the accuracy and consistency of your scoring:

1. Continually review the scoring rubric and the sample student papers, especially when you are in doubt about a particular response.
2. Do not judge one student's paper by another. Instead, apply the same objective criteria to each paper by evaluating the response in terms of the scoring guide.
3. It is advisable to conceal student names when scoring.
4. Review papers you scored earlier in the process to make sure you are using the same criteria.

Grade 4 - Question #1

Scoring Rubric

- 4 POINTS** Response contains correct answer; explanation carries appropriate strategy to correct solution.
- 3 POINTS** Response contains correct answer; explanation contains appropriate strategy with a minor error.
- 2 POINTS** Response contains correct answer; explanation contains appropriate strategy with computation errors.
- OR** Response contains correct answer; explanation does not provide a complete argument.
- 1 POINT** Response contains incorrect answer of "no" based on incorrect computations.
- OR** Response correct, incorrect or omitted. Explanation contains serious errors showing reasoning that requires significant instruction prior to being capable of completing the task.
- 0 POINTS** Response demonstrates no apparent strategy and contains no supporting calculations or explanations.
- OR** Response contains "yes" or "no" answer but omits explanation.
- OR** Omits response; simply restates the problem; or any other response

Grade 4 - Question #1

Exemplar 1

Yes. The popcorn cost \$1.35. Student shows column addition of money equivalents.

2 quarters	= \$0.50
4 dimes	= \$0.40
4 nickels	= \$0.20
2 dimes, 2 nickels	= \$0.30
Total	\$1.40

Exemplar 2

Yes. Response either demonstrates or states that (s)he added the money and the sum was more than \$1.35. Response must include the word "add" or "addition."

Note: Accept the sum of \$1.60 as a "minor" error in both exemplars. Some students misinterpreted Luis' money as 40¢, the same as Carlos', instead of the same **number** of coins as Carlos.

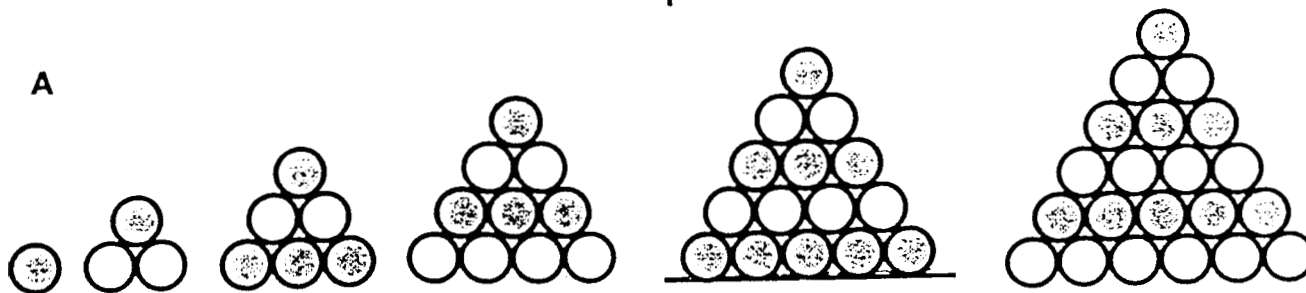
Grade 4 - Question #2

Scoring Rubric

- 4 POINTS** Pyramid shaped figure contains correct number of circles and correct shading.
Both patterns correctly described including number of circles and shading.
- 3 POINTS** Figure contains one pattern sketched correctly with the other pattern incorrect or omitted.
Both patterns correctly described including number of circles and shading.
- OR** Pyramid shaped figure contains correct number of circles and correct shading.
Incorrectly describes or omits description of one of the patterns.
- OR** Pyramid shaped figure contains correct number of circles and correct shading.
Makes minor errors in description of both patterns but shows significant understanding of the content of the problem.
- 2 POINTS** Pyramid shaped figure contains correct number of circles and correct shading.
Incorrectly describes or omits description of both patterns.
- OR** Sketch contains errors in both patterns or sketch is omitted.
Both patterns correctly described including number of circles and shading.
- OR** Sketch contains only one pattern.
Description contains only one pattern.
- OR** Makes minor errors in both patterns in sketch and both descriptions but shows some understanding of the content of the problem.
- 1 POINT** Sketch contains only one of the correct patterns. Other pattern is incorrect or omitted.
Description omitted or shows minimal understanding of the content of the problem.
- OR** Both patterns in sketch are incorrect; or sketch is omitted.
Description correctly supports only one of the two patterns or shows minimal understanding of the pattern.
- 0 POINTS** Shows no understanding of either pattern.
- OR** Omits response; simply restates the problem; or any other response

Grade 4 - Question #2

Exemplar



- B The pattern shows the top circle shaded always and then alternating rows of non-shaded with shaded. Also, there is one circle in the 1st figure, 3 in the 2nd, 6 in the 3rd, 10 in the 4th, etc. The pattern shows adding 2 circles in the 2nd figure; adding 3 circles in the 3rd figure; adding 4 circles in the 4th figure, etc.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer.

Yes, because if you add the money together you have 5¢ left

4 POINTS

Correct answer. Explanation includes addition strategy.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer.

Yes. They had 5 more cents then they needed.

$$\begin{array}{r} 50 \\ 40 \\ 20 \\ 20 \\ + 10 \\ \hline \$1.40 \end{array}$$

4 POINTS

Correct answer. Shows addition of money.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer.

Yes, the Lopez children did have enough money to buy a tub of popcorn. I added all there money up and got \$1.60 and there charge was 25¢.

3 POINTS

Correct answer. Explanation contains appropriate strategy with a minor error.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer.

Yes they did. Because $25 + 25 = 50$
and $50 + 40 = 90$ and $90 + 40 = \$1.30$ and
 $\$1.30 + 35 = \$3.63, 50$ They had
The amount and more.

2 POINTS

Correct answer. Explanation contains appropriate strategy with computation errors.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer.

yes because they had 5¢ extra

2 POINTS

Response contains correct answer. Explanation does not provide a complete argument.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer. Yes they did and because the Lopez children had 10 dollars and the popcorn was 5 dollars.

Yes they did and because I add the 275's and all the ten's and both 5's

$$\begin{array}{r} 100000000 \\ + 55555555 \\ \hline 155555555 \end{array}$$

1 POINT

Correct answer. Work contains serious errors.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer.

The Lopez children did not have enough money to buy the popcorn. They only have \$1.30.

1 POINT

Response contains incorrect answer of "no" based on incorrect computations.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

The Lopez children went to the show. They wanted to buy a tub of popcorn that cost \$1.35. They checked their money and had the following:

- Maria had 2 quarters
- Carlos had 40¢ in dimes
- Luis had the same number of nickels as Carlos had dimes
- Ana had 2 dimes and 2 nickles

Did the Lopez children have enough money to buy the popcorn? Explain how you arrived at your answer.

yes Because

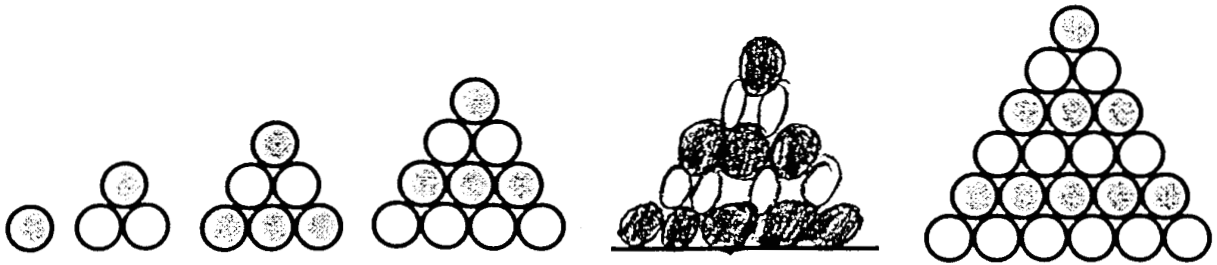
$$\begin{array}{r} 2 \\ +40 \\ +40 \\ +2 \\ +2 \\ \hline 86 \end{array}$$

0 POINTS

Response demonstrates no understanding of money values. Answer contradicts work.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



B Explain the pattern.

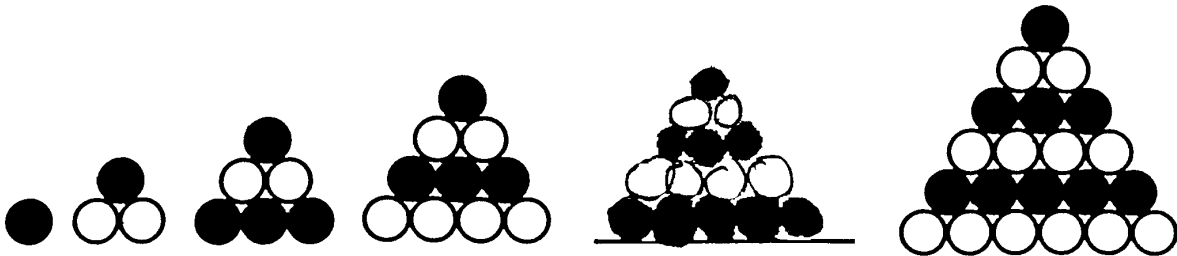
The number of balls
get bigger at the bottom
by one, and the other
pattern goes black balls
white balls, black balls
and so on.

4 POINTS

Correct sketch with correct number of circles and shading. Both patterns correctly described.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



B Explain the pattern.

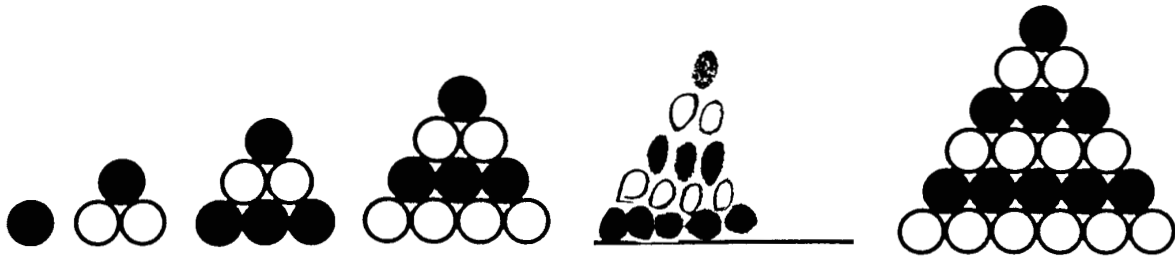
The pattern was that they were adding circles and every other row of circles were shaded.

3 POINTS

Correct sketch with correct number of circles and shading. One pattern correctly described. One pattern incorrectly described.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



B Explain the pattern.

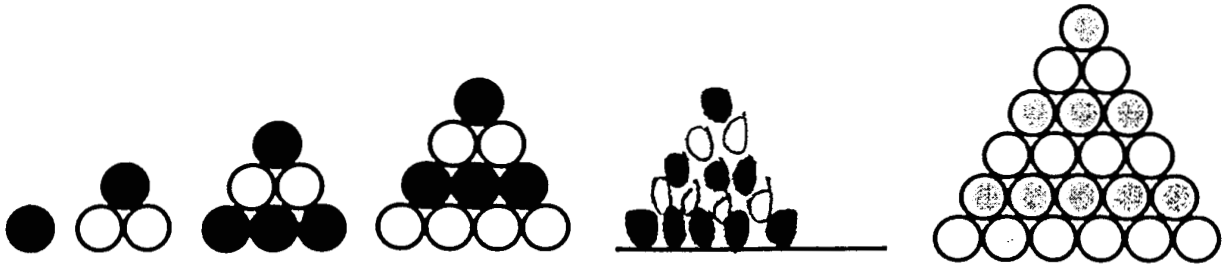
Every number at the bottom gets larger. Every odd number is colored in.

3 POINTS

Correct sketch with correct number of circles and shading. One pattern correctly described. One pattern incorrectly described.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



B Explain the pattern.

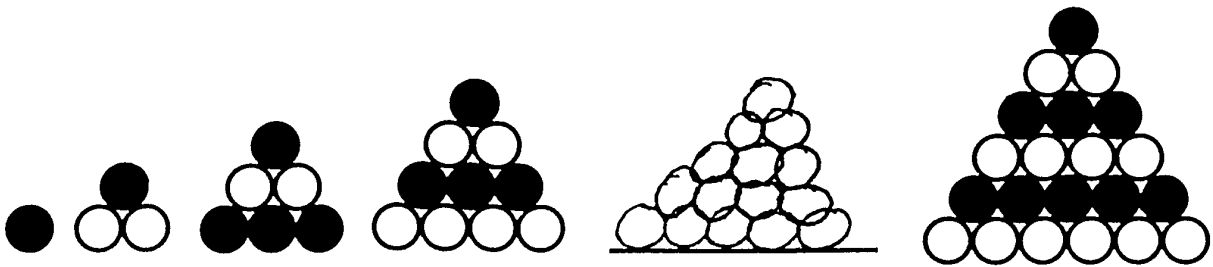
Its like making a pyramid.

2 POINTS

Correct sketch with correct number of circles and shading. Neither pattern described.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



B Explain the pattern.

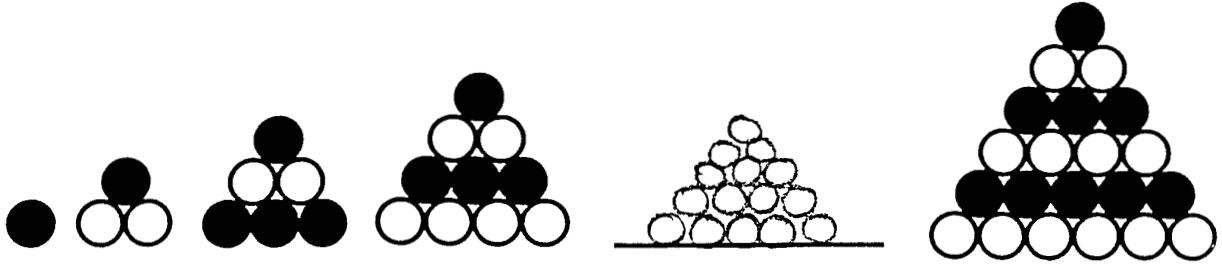
The pattern is on the bottom like it goes on the bottom o oo ooo oooo ooooo oooooo you dont have to look at the top its just the bottom line.

2 POINTS

Both sketch and description lack one pattern, shading.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



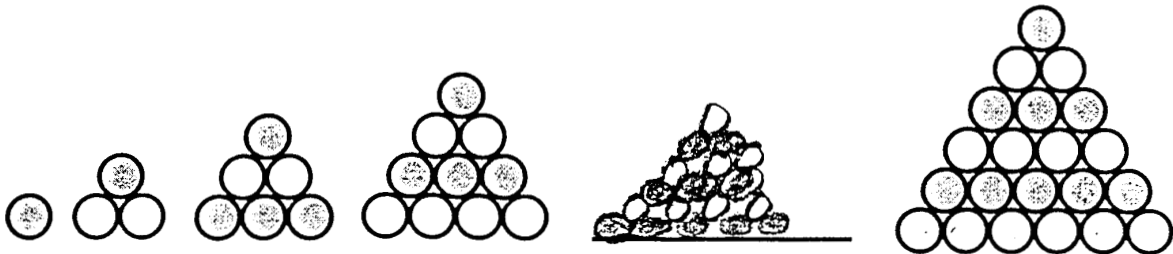
B Explain the pattern. It starts by 1 2 3 4 5 6 7 8 9 10
and so on and so on

1 POINT

Sketch contains only one correct pattern. Shading omitted. Description shows minimal understanding of the content of the problem.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



B Explain the pattern.

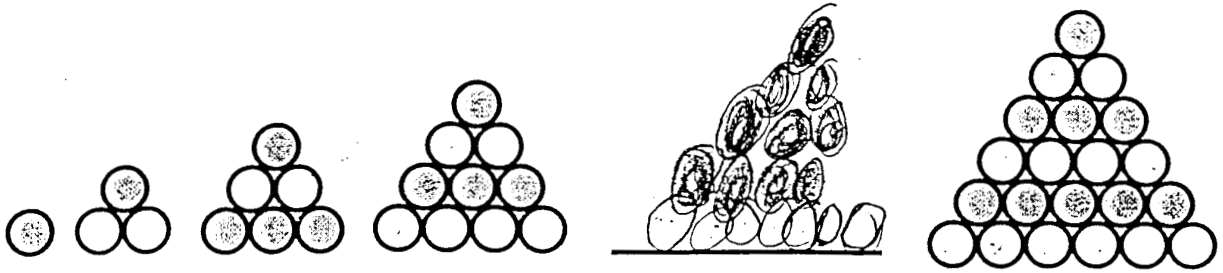
If you had a colored in one
You will know that the next set of circles
will be white. and then you
will go to the next set up above
that and you keep going till you
are done.

1 POINT

Sketch contains incorrect number of circles. Shading pattern is correct.

Directions: Solve the following problem. There may be more than one way to answer correctly. Show as much of your work as possible.

A Insert the missing figure.



B Explain the pattern.

It goes small to large
and some have to
be shaded.

0 POINTS

Shows no understanding of either pattern.